

MOTOR CARRIER CONCERNS WITH CORROSION AND VEHICLE DAMAGE

PANELISTS:

Ed Fink	Colorado DOT
Jerry Whitehead	Western Trailers
Paul Pisano	Federal Highway Administration (FHWA)
Patti Olsgard	Colorado Motor Carriers Association (CMCA)

MODERATOR: Ron Wright, Idaho Transportation Department

Paul Pisano was asked what, in his opinion, the position of FHWA is on the subject of MgCl_2 . He responded that the FHWA's goals are highway safety and mobility, with the greatest benefit and lowest cost. Their role is to promote best practices through information sharing, and identifying issues and solutions. They are looking down the road to long-range research issues, although doing less research themselves. They want to build a bridge to other agencies for necessary communication, such as the Federal Motor Carrier Safety Association (FMCSA), the Federal Rail Administration, and the EPA.

The issue with MgCl_2 use is: if stopped, would there be more accidents?

Patti Olsgard, Directory of Safety, CMCA, gave an overview of trucking industry concerns:

- 1) Cosmetic equipment damage – trucks and trailers with aluminum and chrome wheels damaged, decals coming off faster, harder to wash, decreased market value for resale of equipment.
- 2) Safety issues – liquid deicers get into wiring systems of brakes and engines, degrading equipment.
- 3) Economic issues – Profit margins decreasing because of increased costs in maintenance, replacement components and time spent cleaning parts.

To offset these problems, chemists have been hired to develop restorative cleaners. The CMCA needs information on what methods and products others are using and how they are being used in order to work with vendors, applicators, trainers and transportation officials to find solutions.

Ron W - The main goal of this panel is to get communication lines open, to share knowledge with ATA.

Jerry Whitehead, Western Trailers - It is possible for private and public sectors to find solutions together, finding better methods and materials to build machinery and components?

If paint is bad on a buy-back, can't get good price (\$2500-\$3600 to repaint).

Early 1990 problem arose – thought new paint process required by EPA was the problem.

1999 – baked-on finishes

Correlation between amount of washing and corrosion.

Rock chipping most costly – electrical system problems are easier to solve.

Could use: better materials, better maintenance practices.

Ed Fink, Colorado DOT - Areas of safety gained with advent of deicers.

Chipped window complaints are rarer, more problems with corrosion of aluminum and stainless steel.

He described the testing process done two years ago to see if MgCl_2 was worse than NaCl .

Results were opposite of that expected.

MgCl_2 : Viscosity; salt crystals form when dry; less corrosive than NaCl , but conditions conducive to corrosion exist longer; critical to wash material from bare metals as soon as possible.

Don Walker – University of Wisconsin

Were studies done with chemical mixed with inhibitor or not?

Ed F - Both.

John Blacker – Montana

Patti referred to liquid deicers in opening statement – was that MgCl_2 or all chlorides?

Patti O - All liquids, rather than abrasives. The eastern states use salt-direct application – western states started late in process, going to MgCl_2 . Brief survey done in East, Northeast and Western states – great difference in methods, with less corrosion in the East. More wiring corrosion here, not in Northeast. Paint corrosion is nation-wide.

Greg Leist - Envirotech, Colorado

Road stays in wet phase longer with MgCl_2 . Liquid phase gets into wiring.

Paul P – Is there the same amount of corrosion when MgCl_2 is used on gravel roads?

Ed F – Yes, when it rains, will happen. Addition of corrosion inhibitors increased corrosion.

Jack Manike – Washington

What is the solution to reduce corrosion?

Ed F – It will take 10 times more MgCl_2 to deice a road as compared to one anti-icing application.

Ron Wright – Was solution used on coupons a 3% solution?

Ed Fink – Yes

Ron Wright – Need to further analyze viscosity issue on metal. It may be an electron attraction from the Mg in the MgCl_2 to the aluminum magnesium alloys.

Nona Larsen – (Paccar) – Our concerns are pitting corrosion. Vastly different types, such as deep or shallow pits on valves and connections. Looked into other corrosion mechanisms.

John B - Major complaints in Montana are cosmetic issues.

Testing aluminum quality.

Factory clear-coated more resistant.

Montana building its own trucks – wiring encased, not having electrical failures.

Patti O – ATA Technical Maintenance Council looking at different types of corrosion

Wilford Nixon – University of Iowa

Pitting issue involving microstructure of alloy - Fixing the failure mechanism could give private sector the opportunity to build a better product.

Patti O – We are working with manufacturers – lab tests being done on components.

****If anyone needs a fleet to test, contact Patti, she knows of some who are willing to be part of testing.****

Ron W – Issues still to be pursued. What steps next?

Paul P – Keep dialog going, email list server:

Broaden to all liquid salts, not just MgCl_2 .

Open list.

Activities – do once a year?

Ron Wright – List server a good tool.

Dan W - Multistate Highway Transportation Association (MHTA) will work with PNS.

Meets semi-annually, 10 states involved.

Region 8 – study group – liquid deicers

Paul P – I would like to know more about this.

John B - Would be interested - need to get Montana Director's approval to participate.

Paul P – National perspective: different problems in different parts of the country causes the challenge.

Nona L – Conducting forensic testing on “dead parts” in her office showing sensitivity to vibration.

Ron W – Is Paccar addressing the issue of evaluating different alloys for corrosion?

Nona L – Painted surfaces OK – areas bolted together with top coat, fastening methods. Ran into corrosion happening in two weeks when sending new trucks to buyer on a coast-to-coast delivery during winter.

Ron W – Is trucking industry doing undercoating?

Patti O – We are seeing more undercoating.

Dave Wilkening - Redmond Minerals

Tests can vary widely – This question is for PNS: why choose these certain tests?

Ron W – Washington DOT had a considerable amount of previous experience using the current PNS procedure. The PNS used that previous experience and data as a starting point. As new results are being determined, the PNS will continue to re-evaluate the information as it becomes available. The PNS has been active in reviewing results from within and other agencies for the past couple of years.

Greg L (Envirotech) – Test results were taken to NACE engineers – results made sense to them, and they endorsed the testing PNS did.

Nona L – We are developing our own tests for quality control.